

CLAIMS

1. An exercise machine comprising:
 - a frame;
 - a first footpad connected to said frame so as to rotate along a first path in a first direction about a first drive axis;
 - a second footpad connected to said frame so as to rotate along a second path in a second direction about a second drive axis; and
 - a resistance mechanism attached to said frame, said resistance mechanism effecting said rotation of said first footpad along said first path and said rotation of said second footpad along said second path;

wherein said second path is non-parallel to said first path; and

wherein said first footpad and said second footpad each move independently of the motion of the other.
2. The machine of claim 1 wherein said resistance mechanism resists said rotation of said first footpad along said first path and said rotation of said second footpad along said second path.
3. The machine of claim 1 wherein said resistance mechanism will brake a drive shaft being alternatively driven by said first footpad rotating along said first path and then said second footpad rotating along said second path when said drive shaft reaches a predetermined velocity.
4. The machine of claim 1 wherein said first drive axis and said second drive axis are arranged substantially horizontally.
5. The machine of claim 1 wherein said first drive axis is parallel to said second drive axis.

6. The machine of claim 5 wherein said first drive axis is not co-linear with said second drive axis
7. The machine of claim 1 wherein said first drive axis is angled relative to said second drive axis.

5 8. The machine of claim 1 wherein said first path is a mirror image of said second path.

9. The machine of claim 8 wherein said first path, when viewed from a fixed location, comprises rotation in a clockwise direction about said first drive axis and said second path when viewed from said fixed location, comprises rotation in a counterclockwise direction about said second drive axis.

10 10. The machine of claim 8 wherein said first path and said second path include motion which is vertically downward.

11. The machine of claim 1 wherein said frame includes a base and a vertical support.
12. The machine of claim 11 wherein said vertical support includes handgrips.
13. The machine of claim 1 wherein a control panel is attached to said frame.

15 14. The machine of claim 1 further including a mechanism for collecting physiological data of a user of the machine.

15. The machine of claim 12 wherein said physiological data is used to alter the operation of said machine.
16. The machine of claim 1 wherein said first path is coplanar with said second path.

20 17. The machine of claim 1 wherein each of said first foot pad and said second foot pad are rotationally mounted to an arm and each of said arms rotates about the appropriate drive axis.

18. The machine of claim 17 wherein said arm extends as said first foot pad traverses said first path.
19. The machine of claim 17 wherein each of said first footpad and said second footpad are rotationally mounted to a link and each of said links rotates about a link axis.

5 20. The machine of claim 19 wherein said link and said arm work together to maintain the angle of said footpads relative to the horizontal.

21. The machine of claim 1 wherein said first footpad retains a constant angle to the horizontal while rotating along said first path.
22. The machine of claim 1 wherein said resistance mechanism utilizes electromagnetic resistance.

10 23. The machine of claim 22 wherein said resistance mechanism comprises an eddy current brake (ECB).

24. The machine of claim 22 wherein said resistance mechanism includes a brake on a drive shaft.

15 25. The machine of claim 1 wherein the user adjusts the speed of their motion to alter the difficulty of the exercise.

26. An exercise machine comprising:
 - a frame;
 - means attached to said frame for having a first foot of a user move along a first path;

20 means attached to said frame for having a second foot of a user move along a second path, wherein said second path is non-parallel to said first path and said second path and said first path are coplanar; and

means attached to said frame for effecting said movement of said first foot along said first path and for effecting said movement of said second foot along said second path;

wherein said movement of said first foot occurs independently of said movement of said second foot.

5 27. A method of exercising comprising:

providing an exercise machine including:

a frame; and

at least two footpads moveably mounted on said frame such that each of said footpads can move independently of the other;

10 placing a first human foot on a first of said footpads;

placing a second human foot on a second of said footpads;

visualizing a first plane passing through the toe, heel, and calf of said first human foot and a second plane passing through the toe, heel , and calf of said second human foot;

15 moving said first human foot and said second human foot interchangeably in a manner so as that said planes are both translated relatively simultaneously along a path non-parallel to said planes.

28. The method of claim 27 wherein said translation is along an arcuate path.

29. The method of claim 27 wherein said translation is along a linear path.

30. The method of claim 27 wherein said translation is along a path having a component perpendicular to at least one of said planes.

20 31. The method of claim 27 wherein said planes are parallel.

32. The method of claim 31 wherein the translation of said first plane is coplanar with the translation of said second plane.